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EXAMINER

ALI, MOHAMMAD

ART UNIT PAPER NUMBER

2167

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/703,381

Applicant(s)

DUJARI, RAJEEV

Examiner

Mohammad Ali

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-52 is/are pending in the application.
- 4a) Of the above claim(s) 1-36 and 53-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 8/12/05 has been entered.
2. The application has been examined and claims 37-52 are pending in this Office Action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 37-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forecast et al. ('Forecast' hereinafter), US Patent 6,230,200 B1 in view of Smith, II et al. ('Smith' hereinafter), USP, 5,884,298.

With respect to claim 37,

Forecast discloses a computer-implemented method (see col. 1, lines 16-19) , comprising:

generating a plurality of subdirectory names, wherein each subdirectory name is random (see col. 8, lines 26-30, Forecast);

creating a plurality of randomly-named cache directories, one for each random subdirectory name generated (see col. 67, lines 40-47, Forecast), such that each randomly-named cache directory created is uniquely associated with a corresponding randomly-named subdirectory (see col. 53, lines 14-18, Forecast);

storing a plurality of files under the plurality of randomly-named cache directories, each of the plurality of files having a predictable filename (see col. 2, lines 14-16, Forecast); and

automatically balancing the files among each of the plurality of randomly-named cache directories (see col. 67, lines 40-47, Forecast).

Forecast does not explicitly indicate claimed uniquely named subdirectory.

Smith teaches uniquely named subdirectory (cataloguing optical discs, the cataloguing step including the generation of a unique contents-based value for each of the catalogued discs, the unique value produced by iteratively reading data from the target disc and condensing the data using a selected hashing algorithm; producing limited catalogues representing file and directory information on the optical discs, the limited catalogues confined to a fixed maximum number of subdirectory levels, the limited catalogues including files and directories on the disc possessing attributes which match a specific set of filter parameters, the fixed maximum number of subdirectory

levels selected by a user, and the filter parameters selected by a user; and caching optical disc data to a hard disc, the cached data being written to the hard disc when the optical disc data is requested more frequently than other optical disc data, the request being monitored by a caching file system, the caching file system determining when the request for data can be satisfied by cached data, the caching file system satisfying the request by accessing and communicating requested data from the cache, see col. 2, lines 14-35, Smith).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because uniquely named subdirectory of Smith's teaching would have allowed Forecast's system to access and update a library of optical discs as suggested by Smith at col. 1, line 14. Further, uniquely named subdirectory as taught by Smith improves to optimize performance of the optical disc management system by caching information from optical discs (see col. 25, lines 10-11, Smith).

As to claim 38,

Forecast teaches receiving information corresponding to a new file to store (see col. 11, lines 47-48, Forecast).

As to claim 39,

Forecast teaches wherein automatically balancing files among each of the plurality of randomly-named cache directories includes determining which of the directories has a least number of files therein (see col. 5, lines 50-51, Fig. 14, Forecast).

As to claim 40,

Forecast teaches wherein automatically balancing files among each of the plurality of randomly-named cache directories includes determining when a randomly-named cache directory has a number of files stored therein that exceeds a Limit (see col. 5, lines 50-51, Forecast).

As to claim 41,

Forecast teaches receiving information corresponding to a new file to store, determining that each of the plurality of randomly-named cache directories has a number of files therein that exceeds a limit, and automatically creating at least one new randomly-named cache directory (see col. 20, lines 10-13, Fig. 3, Forecast).

As to claim 42,

Forecast teaches for each file, tracking which of the plurality of randomly-named cache directories that file is stored in (see col. 2, lines 15-17, Forecast).

As to claim 43,

Forecast teaches maintaining a count of a number of files stored in each of the plurality of randomly-named cache directories (see col. 2, lines 15-17, Forecast).

As to claim 44,

Forecast teaches wherein at least one of the plurality of randomly-named cache directories caches content downloaded from a server (see col. 2, lines 15-17, Fig. 6, Forecast).

As to claim 45,

Forecast teaches maintaining a table including sewer content references and filenames covered therefrom (see col. 2, lines 15-17, Fig. 20, Forecast).

As to claim 46,

Forecast teaches wherein automatically balancing files among each of the plurality of randomly-named cache directories includes determining a randomly-named cache directory having a lowest file count, and moving files from another randomly-named cache directory to the randomly-named cache directory having the lowest file count (see col. 2, lines 15-17 and Abstrat, Forecast).

As to claim 47,

Forecast teaches maintaining an index including a directory name for each of the plurality of randomly-named cache directories, and for each directory name, maintaining a file count of a number of files stored therein (see col. 2, lines 56-60 et seq, Forecast).

As to claim 48,

Forecast teaches comparing the number of files in one of the pluralilty of randomly-named cache directories having the least number of files therein against a predetermined threshold value, and based on the comparison, generating at least one additional randomly-named cache directory (see col. 2, lines 15-17, Fig. 2, and Abstract, Forecast).

As to claim 49,

Forecast teaches maintaining an indexed directory table including data corresponding to each of the plurality of randomly-named cache directories therein, and maintaining a table including file information and corresponding file directory information for each file in one of the plurality of randomly-named cache Directories (see col. 8, lines 10-15, Fig. 3, Forecast).

As to claim 50,

Forecast teaches wherein automatically balancing files among each of the plurality of randomly-named cache directories includes moving at least one file from one of the plurality of randomly-named cache directories to another of the plurality of randomly-named cache directories following deletion of at least one other file (see col. 8, lines 10-15, Fig. 3, Forecast).

As to claim 51,

Forecast teaches maintaining a file count of a number of files stored in each of the plurality of randomly-named cache directories, and wherein automatically balancing files among each of the plurality of randomly-named cache directories includes moving at least one file out of one of the plurality of randomly-named cache directories when the file count maintained therefor is below a threshold value (see col. 8, lines 10-15, Fig. 3, Forecast).

As to claim 52,

Forecast teaches removing one of the plurality of randomly-named cache directories based on the file count maintained therefor (see col. 6, lines 30-35, Fig. 1, Forecast).

Remarks

5. **First**, Forecast teaches, 'generating a plurality of subdirectory names, wherein each subdirectory name is random' as, Fig. 16 describes the plurality of subdirectories generation and is shown a schematic allocating server RAM to a popular movie. In FIG. 16, a block of data for a third of a movie is stored in the RAM of each of

four stream servers 91, 92, 93, and 94. There is a significant amount of overlap between the video data stored in the RAM of the four stream servers in order to simplify scheduling (see col. 23, lines 42-59 et seq., Forecast).

Second, Forecast teaches, 'creating a plurality of randomly-named cached directories, one for each random subdirectory name generated' as, each node has a list of resources and current allocations of the resources. Associated with each active data stream is a list of pointers to the nodes and current allocations for the data stream. The controller of the file server has programs for automatically creating the dynamic model, modifying the dynamic model in response to component changes such as component failures, enforcing a scheduling and admissions policy by allocating resources for a path for a data stream during a search through the dynamic model in response to a client request for data access, de-allocating resources in response to an end-of-stream condition, and balancing allocations of resources to data streams in order to free resources to allocate a path for a requested data stream. In Figs. 45 and 46, there is shown a block diagram of a particular instance of a video file server 620 including two stream servers 621, 622 in FIG. 45 and a cached disk array 623 in FIG. 46. The first stream server 621 has a first network interface link adapter 624 receiving a first data link 625 from a data network 626 in FIG. 45, and a second network interface link adapter 627 receiving a second data link 628 from the network 626. The first network interface link adapter 624 is supported by a first network interface physical network 625, and the second network interface link adapter 627 is supported by a second network interface physical network 629. The first and second network interface physical networks 625,

629 are linked through a network interface logical sub-network 630 to a cache buffer 631 of the stream server 621. The stream server 621 has two SCSI interfaces 632, 633, linking the cache buffers 631 to the cached disk array 623 of FIG. 46 (see col. 61, lines 6-23 and Abstract, Forecast).

Third, Forecast teaches, 'automatically balancing files among each of the selected directories' as, allocation balance is used as a background process to keep open paths to datasets. The dynamic model automatically creates to collect information about what components are installed in the file server, the resources of the installed components, and connections between the installed components, see col. 67, lines 41-47, Forecast.

Fourth, Forecast teaches, 'balancing files among directories' as, a server window RAM is assigned to the movie, and a task is initiated to load this server window RAM with duplicate movie data fetched from the cached disk array. If more than one stream server PC has an unallocated window, then one of these stream servers should be selected in an attempt to balance the loading on all of the stream servers (see col. 25, lines 35-40, Forecast).

Fifth, Forecast teaches 'load balancing files' as stated above.

Sixth, Forecast 'exceeds limit,...'. as, a network client requests backup of a new file or data set, the volume manager allocates disk and tape storage to the new file or data set and updates the catalog, see col. 28, lines 47-59 and col. 44, lines 50-52.


6. Rustad et al. (USP, 5,442,760) also teaches claimed invention including uniquely named cache subdirectory.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (571) 272-4105. The examiner can normally be reached on Monday-Thursday (7:30 am-6:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mohammad Ali
Primary Examiner
Art Unit 2167

MA
September 26, 2005